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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,763	02/22/2002	Douglas R. Coffland	IL-10830	1205
7590	12/10/2004		EXAMINER HUNG, YUBIN	
Eddie E. Scott Assistant Laboratory Counsel Lawrence Livermore National Laboratory P.O. Box 808, L-703 Livermore, CA 94551			ART UNIT 2625	PAPER NUMBER

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/080,763	Applicant(s) COFFLAND, DOUGLAS R.	
	Examiner Yubin Hung	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/22/02</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show a system as described in the specification (Paragraph 33 in PP. 15-16).

Specifically, what is shown in Fig. 6 is neither a commonly accepted block diagram showing the structural relationship of system components nor a flow chart showing the functional steps. In addition, reference numeral 33 of Fig. 6 should have been "63."

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
- P. 10, lines 6 & 14; P. 13, lines 11 & 15; P. 15, lines 1 & 4: "Equation 1" cannot be located. **(Examiner's suggestion: Label the equation of Line 16, P. 9 as Equation 1.)**
 - P. 10, lines 14-15; P. 13, lines 14-15; P. 15, lines 4-5; P. 17, lines 8-9: Since applying the equation to horizontal lines only results in images that appear stretched horizontally (P.10, lines 5-7 and as can be seen from Figs. 2 and 3), doing the same in the vertical dimension should result in images that appear **stretched** vertically, instead of lines being skipped
 - Throughout the application (e.g., P. 9, lines 3-4): The term "zooming" can mean either zooming in (making an object look larger) or zooming out (making an object look smaller) and the specification has not explicitly indicated which.
[Note: For examination purpose hereinafter "zooming" will be interpreted mean generally either "zooming in" or "zooming out"]

- Throughout the application (e.g., P. 9, line 10): The term “over-sampling” has a specific meaning in the art, namely, a signal sampled at a frequency higher than the Nyquist frequency is said to be over-sampled. For the invention recited in the application, Examiner believes the term “sampling” is more appropriate
[Note: For examination purpose hereinafter “over-sample” will be interpreted as “sample” (which can be either “up-sample” or “down-sample”)]
- P. 14, lines 3-5: Incomprehensible. First, what does “isolate” mean? Isolate from what? Second, if Fig. 4 is the result of scaling, what’s the image like before scaling? Without it, the effect of the scaling cannot be properly understood

Appropriate correction is required.

Examiner’s Comment

3. Regarding P. 9, paragraphs [0016] – [0018] (representative of similar descriptions of the invention in other parts of the specification):

In paragraph [0016] zooming, with an *increasing* (bottom-to-top) scale factor, is applied to lines of the image while in paragraph [0017] sampling, with a *decreasing* rate (bottom-to-top), is applied to the lines of the image using the equation of [0018].

Paragraph [0016] alone, with possibly some proper trimming at both ends (or similarly operation such as down-sampling) of the zoomed lines (since in line 9 of P. 9 the specification discloses that the number of pixels used in each horizontal line is a constant) can transform, for example, the image of Fig. 2 to that of Fig. 3. On the other hand, if all lines of the image of Fig. 2 have been **uniformly** zoomed (say by 2x) and subsequently operations of [0017] are carried out, then together with proper trimming Fig. 3 again can be obtained.

Clearly, if the transformation of Fig. 2 to Fig. 3 is the desired result of the invention (which Examiner believes it is when reading the specification as a whole), then it is impossible to both zoom the top of the image of, say, Fig. 2 more than the bottom **and** then sample the bottom more than the top in order to obtain the image of Fig. 3. However, the method recited in claims 23-25 (read together) in essence is the combination of paragraphs [0016]-[0018]. While claims 1-31 will be examined as presented (except otherwise indicated in 35 USC § 112 rejections below), Applicant is urged to consider the discussion above carefully and, if agreed, amend the specification and/or claims as appropriate.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

6. Regarding claim 1, and similarly claims 17, 23 and their respective dependent claims 2-16, 18-22 and 24-31, the meaning of the term "resolution" recited in line 9 is ambiguous: it can mean either (A) the number of pixels per line in an image (or display) or (B) the number of pixels per unit distance, where the distance is measured in the physical space of a scene whose image is being or has been captured. (E.g., the lions in the image of Fig. 2 should have roughly the same physical size but the top one is much smaller than the bottom in the image. The size difference cannot be attributed to their actual physical size difference; rather, it is because they are captured at different resolutions in the sense of (B) above.) P. 8, lines 15-17 and P. 10, last three lines appear to imply definition (B). However, if the top of an image is zoomed (either in or out) as recited in the claim, then the corresponding resolution (in the sense of definition (B)) is changed, because the object (e.g. a lion) at the top will become either larger or smaller. Therefore the resolution in the top (i.e., the far field) cannot be maintained as recited in the last line of the claim, unless the resolution is in the sense of definition (A)

above and an implicit, unspecified operation [such as down-sampling or trimming at either or both ends of the lengthened lines (assuming it's a zoom-in)] is carried out to maintain the original (i.e., before zooming) number of pixels per line.

[Note: For examination purpose hereinafter “resolution” will be interpreted as the number of pixels per line in an image or display, i.e., definition (A) above).]

7. Regarding claim 17, and similarly its dependent claims 18-22, the specification fails to describe how a computer-readable medium *per se* can apply the functions recited in the claim. (Note: it is well known in the art that a medium by itself does not have the capability of carrying out any functions even if proper computer instructions have been previously stored therein.)

[Note: For examination purpose hereinafter the medium will be interpreted as containing the necessary instructions that when executed will carry out the recited functions.]

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 1, 2, 5-7, 9-12, 14-21, 23, 24, 26, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over West et al. (US 6,339,434), in view of Melen (US 6,320,979).

Regarding claim 1, and similarly claim 23, West discloses

- applying a specific zooming scale factor to each of said lines of pixels and continuously increasing the scale factor from said bottom to said top to capture said scene in said near field, yet maintain resolution in said scene in said far field
[Figs. 1, 2, 9; Col. 2, lines 26-40, especially, lines 37-40; Col. 3, lines 38-47; Col. 6, lines 8-16; Col. 7, lines 1-6; claim 31. Note that in Col. 2, line 35 a scaling factor in the range of $1/64x$ and $32x$ is disclosed and Fig. 9, when both images (90 and 92) are inverted (as an obvious variation), indicates an increasing scaling (i.e., zooming) factor from bottom to the top (with the factor at the top of the inverted image being $1x$). Clearly, the inverted images indicate that the near field of the scene is captured and yet the resolution of the far field in the scene is maintained (since the number of pixels per line remain the same)]

West does not expressly disclose a camera and a computer (to apply the scaling).

However, Melen teaches/suggests using a camera and a computer. [Fig. 6.]

West and Melen are combinable because they are from the same field of endeavor of image transformation.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify West with the teaching of Melen by using a camera and a computer. The motivation would have been to provide image transformation at the time of image acquisition to enable real-time display of images of desired quality.

Therefore, it would have been obvious to combine Melen with West to obtain the invention of Claim 1.

10. Regarding claims 2, 5-7 and 17, Melen further discloses a still digital camera (which obviously can be used for surveillance purpose) [Figs. 3a, 3b; Fig. 6, ref. 308; Col. 3, lines 45-50], a generous-purpose, digital computer [Fig. 6, ref. 306] and a computer-readable medium [Fig. 6, ref. 610].

11. Regarding claims 9, and similarly claims 18, 24 and 31, the combined invention of West and Melen discloses

- said lines of pixels are horizontal lines of pixels [West: Fig. 1, refs. 22, 24, 25. Note that only horizontal lines are scaled]
- said computer contains a computer program that applies a specific zooming scale factor to each of said horizontal lines of pixels and continuously increases the scale factor of said horizontal lines of pixels from said bottom to said top to capture said scene in said near field, yet maintain resolution in said scene in said far field [Melen: Fig. 6, ref. 610 (program-containing medium). Also per the analysis of claim 1 regarding the zooming scaling function]

12. Regarding claim 10, and similarly claim 19, Melen further discloses

- (claim 10) said horizontal lines of pixels form a digital image and [Fig. 6, ref. 308. Note that 308 is a digital camera and therefore the captured image is a digital image]

13. Regarding claim 11, and similarly claim 20, **official notice is taken** that digitizing photographic images (e.g., by using a scanner) so that digital image processing operations can be applied (e.g., by using Adobe® PhotoShop®) is widely practiced.

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Therefore, it would have been obvious to one of ordinary skill in the art to modify the combined invention of West and Melen by using photographic images so that the images can be transformed to achieve the desired effect.

14. Regarding claim 12, and similarly claims 21 and 26, West further discloses

- said lines of pixels are over-sampled
[Fig. 1; Fig. 2, refs. 26, 28; Col. 3, lines 38-47]

15. Regarding claim 14, and similarly claim 28, West further discloses

- said lines of pixels are over-sampled using graded zooming in a horizontal and a vertical directions
[Fig. 1. Note that the converters in 21 and 22 scale ("over-sample," or as interpreted, down-sample) in the vertical and the horizontal directions, respectively. For obviousness of graded zooming (i.e., using a varying scaling factor), see the analysis for claim 1]

16. Regarding claim 15, and similarly claim 29, West further discloses

- the number of said pixels used in said horizontal line of pixels is constant
[Fig. 9. Note that both the input image (the shaded area of image 90) and the output image (image 92, including the white area) are rectangular and have the same dimensions; therefore the number of pixels for the lines is a constant]
- the rate of over-sampling of said pixels is reduced from said bottom to said top.
[Per the analysis of claim 1]
- according to a scale factor wherein said horizontal line of said pixels at said top of said scene is zoomed to 2X of that of said horizontal line of said pixels at said bottom of said scene
[Figs. 1, 2, 9; Col. 2, lines 26-40, especially, lines 37-40; Col. 3, lines 38-47; Col. 6, lines 8-16; Col. 7, lines 1-6; claim 31. Note that per the analysis of claim 1, West has taught a top-bottom zooming ratio of 2x which can be achieved if, for example, the zooming factor for the bottom line is 1/2x and for the top line is 1x (since it has taught using continuous zooming on a line-by-line basis using zooming factors of between 1/64x and 32x).

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17. Regarding claim 16, and similarly claim 30, per the analysis of claim 15 the combined invention of West and Melen teaches/suggests

- the number of said pixels used in said horizontal line of pixels is constant
- the rate of over-sampling of said pixels is reduced from said bottom to said top
- according to a scale factor wherein said horizontal line of said pixels at said top of said scene is zoomed to 2X of that of said horizontal line of said pixels at said bottom of said scene

In addition, West further teaches/suggests

- said bottom line is over-sampled at a rate of 2, while said top line is not over-sampled at all
[Similar analysis for claim 15 regarding the top-bottom zoom ratio applies, since over-sampling (interpreted as sampling) is equivalent to zooming when applied to images (e.g., zoom-in, which makes an image larger, is equivalent to up-sampling)]

similar analysis for claim 15 regarding the top-bottom zoom ratio can

18. Claims 3, 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over West et al. (US 6,339,434) and Melen (US 6,320,979) as applied to claims 1, 2, 5-7, 9-12, 14-21, 23, 24, 26, and 29-31 above, and further in view of Vaios (US 6,271,752).

19. Regarding claims 3, 4 and 8, the combined invention of West and Melen teaches/suggests all limitations of their parent, claim 1.

The combined invention of West and Melen does not expressly disclose

- (claim 3) wherein said camera is a video surveillance camera
- (claim 4) wherein said camera is a digital camera interconnected via a digital network
- (claim 8) wherein said computer is connected to a digital network

However, Vaios teaches/suggests a system that uses a surveillance video camera and a computer that are both connected to a digital network. [Figs. 1 & 2; Col. 3, lines 14-36. Note that Melen teaches/suggest using a digital camera, as per the analysis of claims 2, 5-7 and 17 above.]

The combined invention of West and Melen is combinable with Vaios because they have aspects that are from the same field of endeavor of image acquisition and processing.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of West and Melen with the teaching of Vaios by using a surveillance video camera and a computer and connect them to a digital network.

The motivation would have been to enable individuals to access remotely a security surveillance area, as indicated by Vaios in Col. 1, lines 63-66.

Therefore, it would have been obvious to combine Vaios with the combined invention of West and Melen to obtain the inventions of claims 3, 4 and 8.

Allowable Subject Matter

20. Claims 13, 22, 25 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

21. The following is a statement of reasons for the indication of allowable subject matter:

22. Regarding claim 13, and similarly claims 22, 25 and 27, closest art of record neither discloses nor teaches/suggests the use of the equation recited in the claim for any purpose.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (703) 305-1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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December 8, 2004



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